DAMASCENE FABRICATION WITH ELECTROCHEMICAL LAYER REMOVAL

ABSTRACT OF THE DISCLOSURE

The present application discloses process comprising providing a wafer, the wafer comprising an inter-layer dielectric (ILD) having a feature therein, an under-layer deposited on the ILD, and a barrier layer deposited on the under-layer, and a conductive layer deposited in the feature, placing the wafer in an electrolyte, such that at least the barrier layer is immersed in the electrolyte, and applying an electrical potential between the electrode and the wafer. Also disclosed is an apparatus comprising a vessel having an electrolyte therein, a first electrode at least partially immersed in the electrolyte, the first electrode comprising a wafer comprising an inter-layer dielectric (ILD) having a feature therein, an under-layer deposited on the ILD layer, a barrier layer deposited on the under-layer and a conductive layer deposited in the feature, a second electrode at least partially immersed in the electrolyte, and a potential source for applying a potential difference between the first and second electrodes. Other embodiments are also disclosed and claimed.